

TECHNICAL EXHIBIT
APPLICATION FOR MINOR CHANGE
DTV CONSTRUCTION PERMIT
STATION WUPX-DT (FACILITY ID 23128)
MOREHEAD, KENTUCKY

JUNE 8, 2004

CH 21 719 KW-DA 428 M

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Technical Narrative

This Technical Exhibit supports a minor change application for a digital television (DTV) construction permit (CP) for station WUPX-DT at Morehead, Kentucky (Facility ID 23128). Station WUPX-DT is currently licensed to operate on channel 21 with a directional antenna (DA) system (BLCDT-20021108ABE). Station WUPX-DT is authorized to use a Dielectric TFU-30DSC-R-S180 directional antenna system with a “skull” shaped azimuth pattern. The major lobe of radiation is oriented toward 270 degrees True (west). The maximum effective radiated power (ERP) is 719 kilowatts (kW). The antenna center of radiation is located 393.2 meters above ground level (AGL) and 752.9 meters above mean sea level (AMSL). The antenna height above average terrain (HAAT) is 434 meters. The transmitter site coordinates are 37-54-27, 83-38-00 (NAD-27). The FCC antenna structure registration number is 1063995.

Proposed DTV Facilities

This minor change application reflects corrections to the WUPX-DT operation that have resulted from a recent survey of the site and ground elevation. Consequently there are small changes to the WUPX-DT site coordinates and elevation information. The revised site coordinates are 37-54-27, 83-38-01 (NAD-27). There is no change in the transmitting antenna system or the pattern orientation (see Figure 2). The maximum ERP remains unchanged at 719 kW. The antenna center of radiation is 381.6 meters AGL and 751.3 meters

AMSL (see Figure 1). Using a 3 second digitized terrain database, the antenna HAAT has been calculated to be 428 meters. There is no proposed change in the channel (21) or city of license (Morehead, KY).

The WUPX-DT transmitter site is approximately 427 kilometers from the closest point of the Canadian border. The WUPX-DT site is more than 1800 kilometers from the closest point of the Mexican border. The closest FCC monitoring station is at Powder Springs, Georgia, approximately 460 kilometers to the south. The closest point of the National Radio Quiet Zone (VA/WV) is more than 270 kilometers to the east. The closest point of the Table Mountain Radio Quiet Zone (CO) is more than 1800 kilometers to the west. The closest radio astronomy site operating on TV channel 37 is at Green Bank, West Virginia, approximately 336 kilometers to the east-northeast. These separations are considered sufficient to not be a coordination concern.

The WUPX-DT transmitter site is also used for the WUPX-TV analog operation on channel 67. There are no known FM or AM stations within 5 kilometers (3 miles) of the WUPX-DT site. No adverse electromagnetic interaction is expected. The applicant recognizes that it is responsible to remedy prohibited electromagnetic problems that its proposed operation may create.

Figure 3 is a map showing the predicted 48 dBu F(50,90) principal city contour and 41 dBu F(50,90) service contour for the proposed WUPX-DT operation. The city limits of Morehead, as defined in the 2000 US Census for Kentucky, are identified. The predicted 48 dBu contour encompasses the Morehead limits as required by the FCC rules. Although there is some terrain shadowing in the path between the WUPX-DT site and Morehead, it is not considered significant since a calculated signal of greater than 48 dBu is provided to Morehead using the Longley-Rice propagation model. The estimated population (2000 Census) and land area within the predicted 41 dBu contour is 1,014,756 people and 30,500 square kilometers, respectively.

Allocation Study

Interference calculations have been made using the procedures outlined in the FCC's OET-69 Bulletin and a 2 kilometer grid. The proposed WUPX-DT operation complies with the FCC's 2%/10% interference standards with respect to pertinent surrounding analog (NTSC) full service TV assignments and DTV assignments and allotments.

Pertinent low power television (LPTV) stations that qualify for Class A consideration and are operating within the FCC's core band (ie, 2-51) have been examined. No adverse interference problems to Class A TV assignments are predicted.

Radiofrequency Electromagnetic Field Exposure

The WUPX-DT facilities were evaluated in terms of potential radio frequency (RF) energy exposure at ground level to workers and the general public. The radiation center for the WUPX-DT antenna is located 381.6 meters above ground level. The maximum DTV ERP is 719 kW. A relative field value of 0.15 was assumed for the antenna's downward radiation (see Figure 2). The calculated power density at a point 2 meters (6.6 feet) above ground level is 0.00375 mW/cm^2 . This is less than 2% of the FCC's recommended limit of 0.34 mW/cm^2 for channel 21 for an "uncontrolled" environment. The calculated power density is less than 1% of the FCC's recommended limit for a "controlled" environment.

Access to the transmitting site will be restricted and appropriately marked with warning signs. As this is a multi-user site an agreement will control access. In the event that workers or other authorized personnel enter restricted areas or climb the tower, appropriate measures will be taken to assure worker safety with respect to radio frequency radiation exposure. Such measures include reducing the average exposure by spreading out the work over a longer period of time, wearing "accepted" RFR protective clothing and/or RFR exposure monitors or scheduling work when the stations are at reduced power or shut down.

If there are questions concerning the technical portion of this application,
please contact the office of the undersigned.

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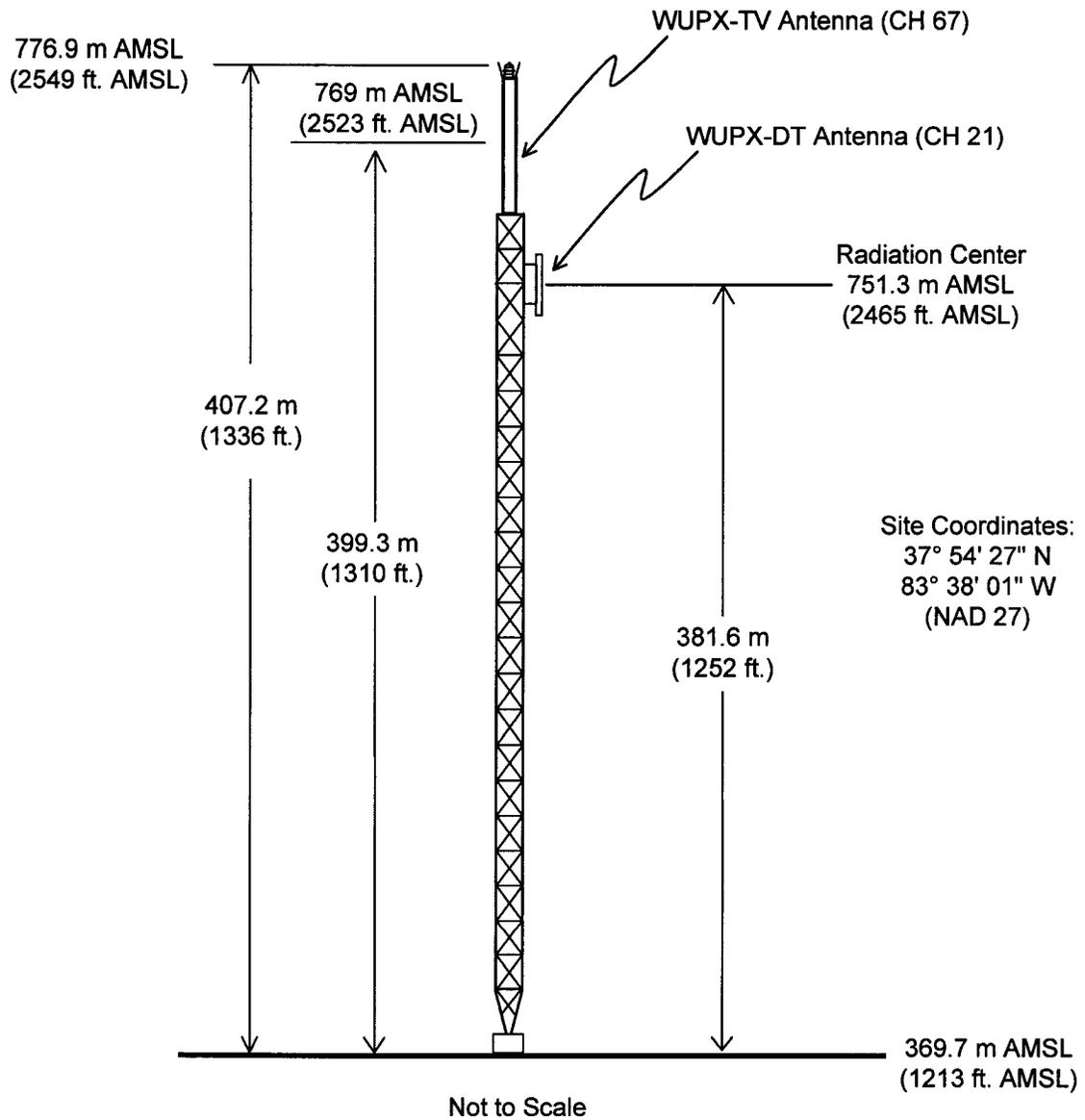
June 8, 2004

Figure 1



JUNE 2004

Tower Registration: #1063995
(to be revised)



ANTENNA & SUPPORTING STRUCTURE

STATION WUPX-DT
MOREHEAD, KENTUCKY
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du Treil, Lundin & Rackley, Inc., Sarasota, Florida

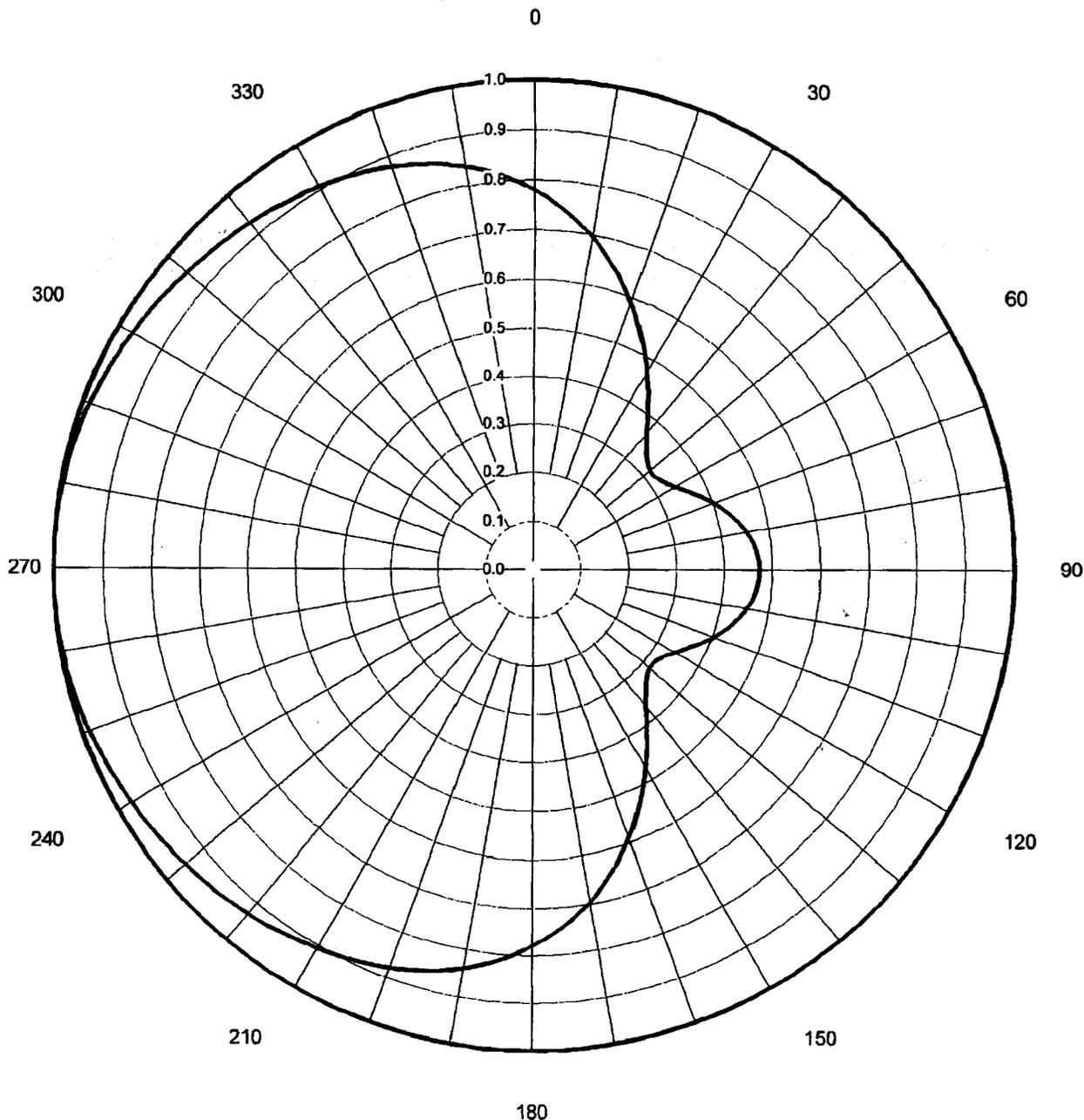


Proposal Number **DCA-8792**
Date **21-Jun-00**
Call Letters **WAOM-DT** Channel **21**
Location **Morehead, KY**
Customer **Paxson**
Antenna Type **TFU-30DSC-R S180**

AZIMUTH PATTERN

Gain **1.80** **(2.55 dB)**
Calculated / Measured **Calculated**

Frequency **515.00 MHz**
Drawing # **TFU-S180**

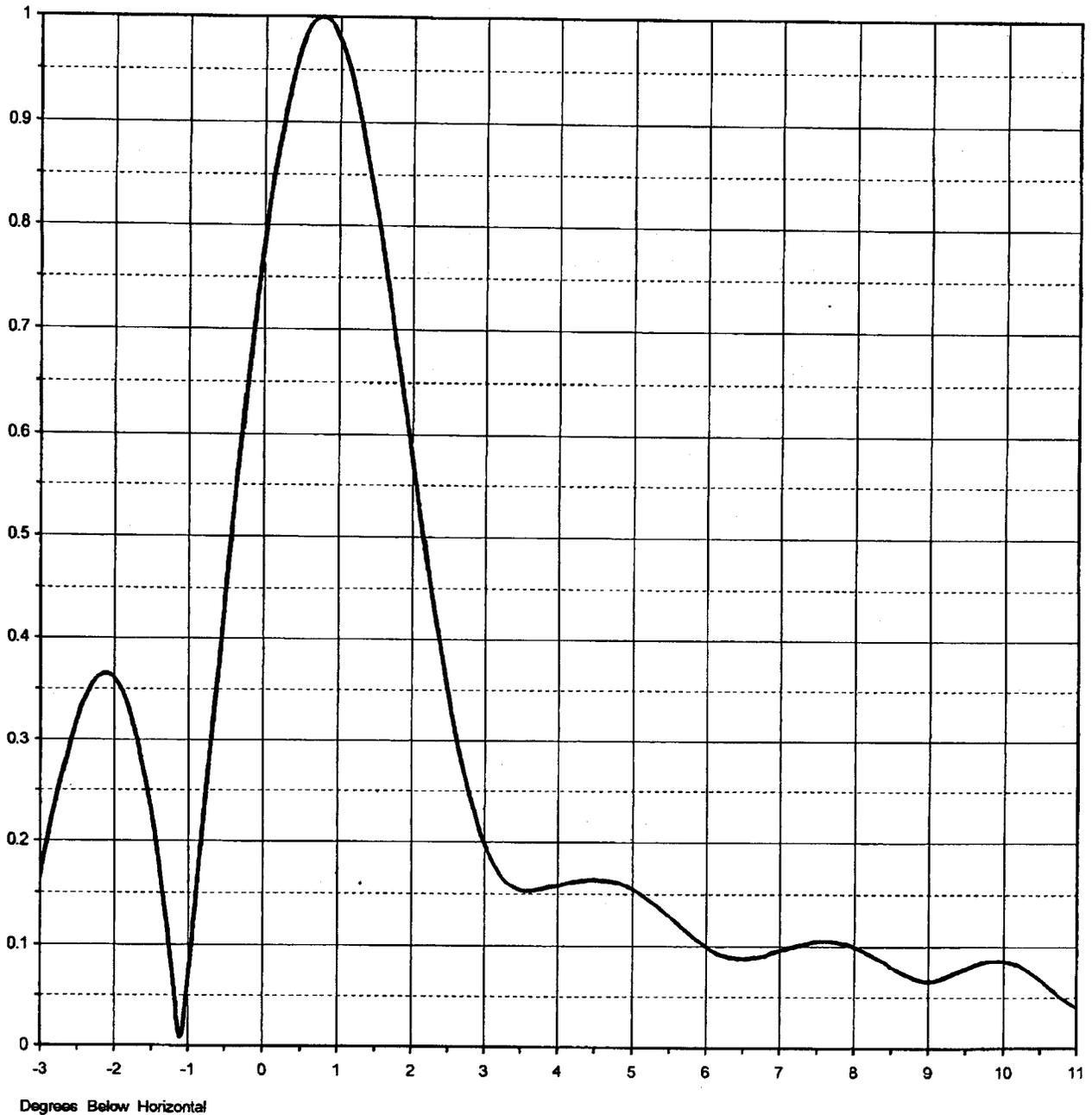




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ELEVATION PATTERN

RMS Gain at Main Lobe	25.50 (14.07 dB)	Beam Tilt	0.75 deg
RMS Gain at Horizontal	15.40 (11.88 dB)	Frequency	515.00 MHz
Calculated / Measured	Calculated	Drawing #	30Q255075

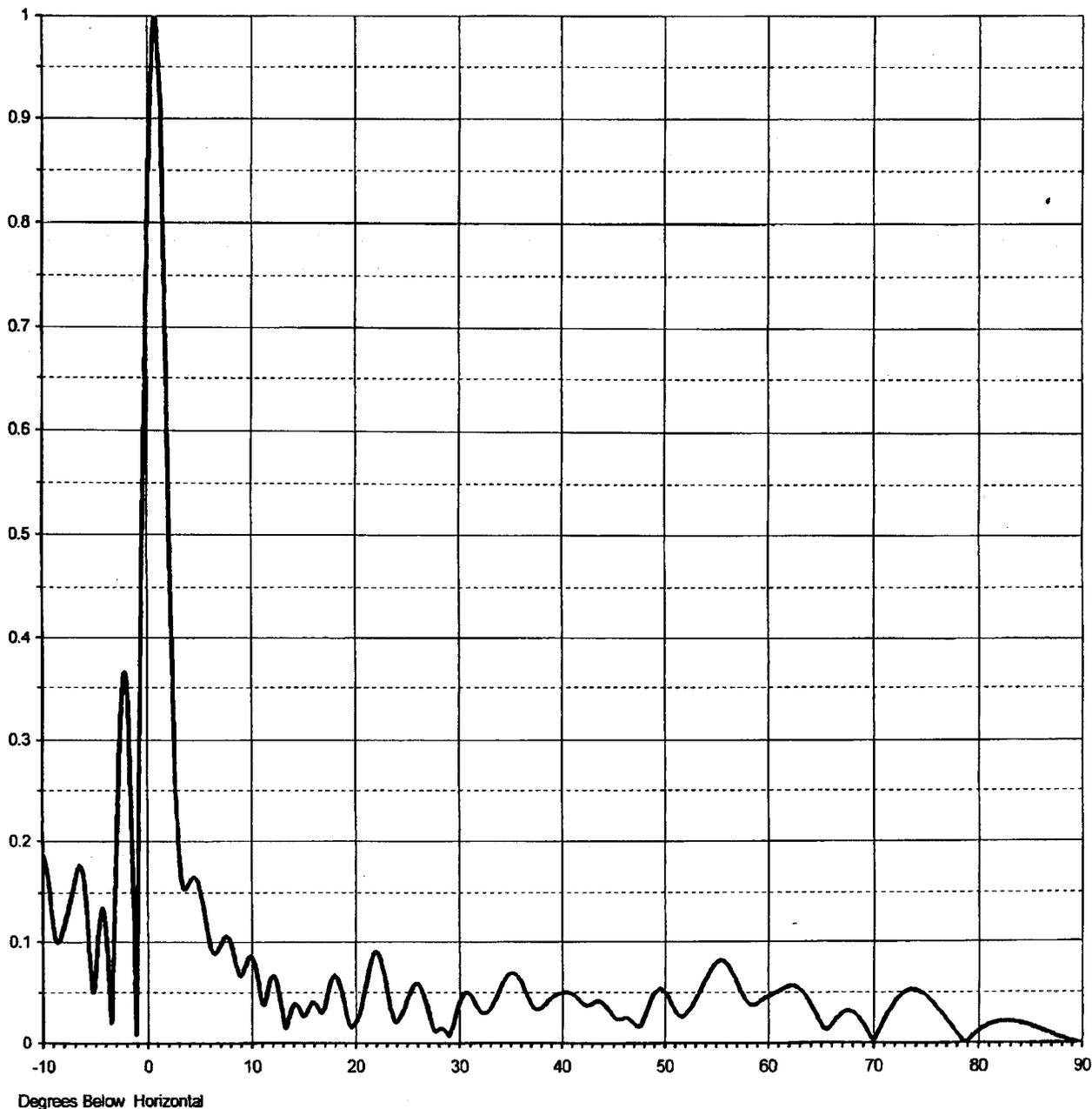




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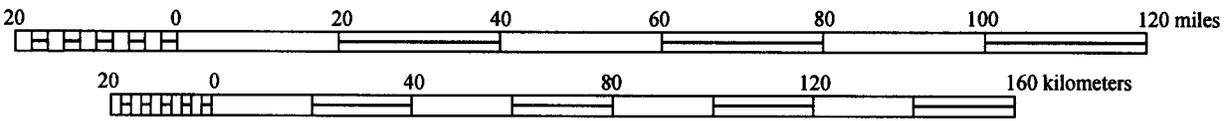
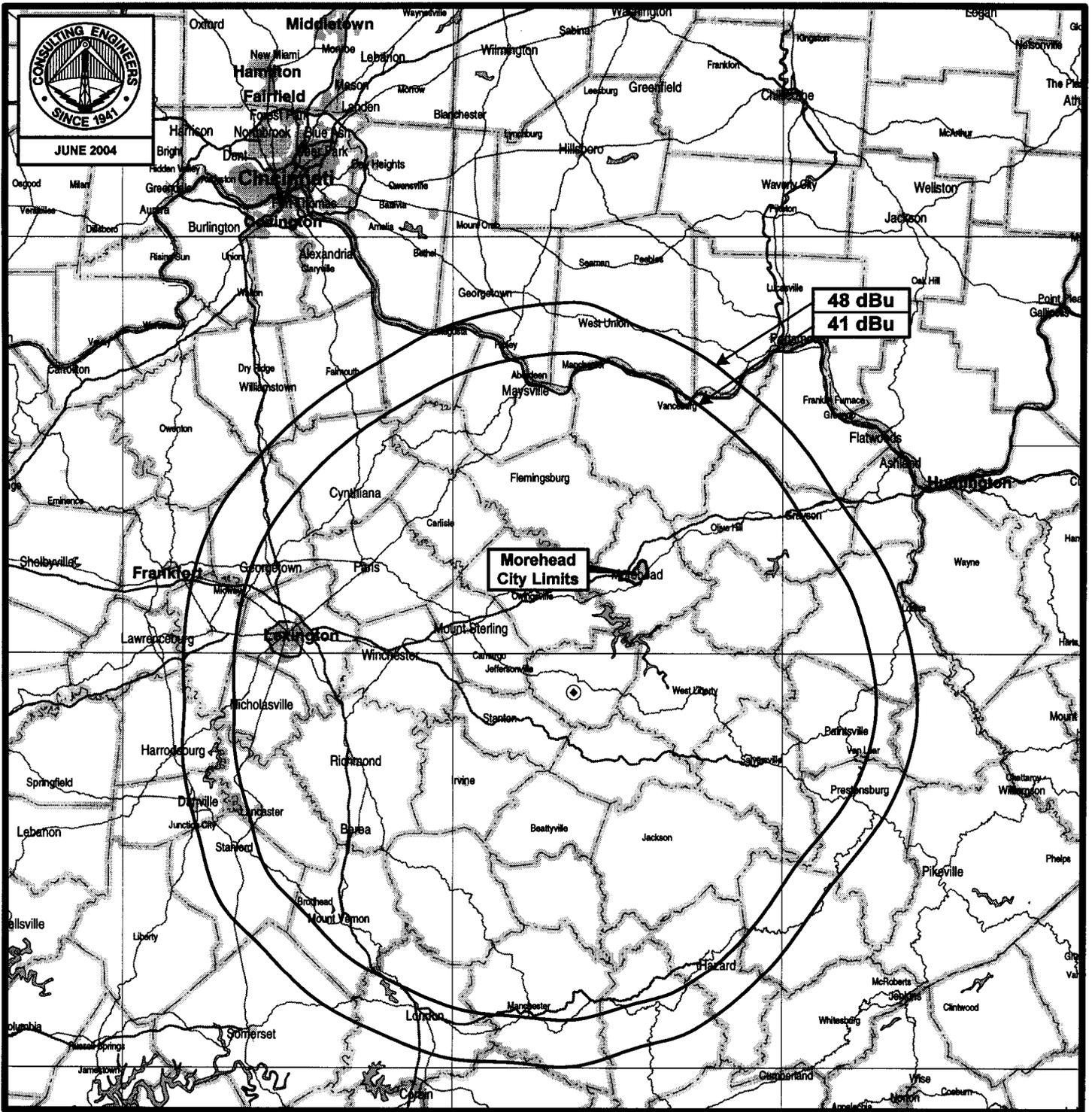
ELEVATION PATTERN

RMS Gain at Main Lobe	25.50 (14.07 dB)	Beam Tilt	0.75 deg
RMS Gain at Horizontal	15.40 (11.88 dB)	Frequency	515.00 MHz
Calculated / Measured	Calculated	Drawing #	30Q255075-90



Degrees Below Horizontal

Figure 3



PREDICTED DTV COVERAGE CONTOURS

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du Treil, Lundin & Rackley, Inc Sarasota, Florida

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Technical Specifications For Proposed DTV Operation

Channel	21
Frequency	512-518 MHz
Proposed Site Coordinates (NAD 27)	37° 54' 27" North Latitude 83° 38' 01" West Longitude
Site Elevation above mean sea level	369.7 m
Average elevation above mean sea level of 8 equally spaced radials, 3-16 kilometers	323.3 m
Overall height of antenna structure (#1063995)	
Above ground	407.2 m
Above mean sea level	776.9 m
Height of antenna radiation center	
Above ground	381.6 m
Above mean sea level	751.3 m
Above average terrain	428 m
Transmitter rated power output (average)	25 kW
Transmission line	Dielectric 6-1/8", 75 Ohm, rigid coax
Length	(1400 ft) 426.7 m
Efficiency	70.2%
Antenna	Dielectric TFU-30DSC-R-S180
Polarization	Horizontal
Peak Power Gain	45.9
Beam Tilt (electrical)	0.75°

Proposed Operation

Transmitter output power (average)	22.3 kW
Transmission line	6.6 kW
Antenna input power	15.7 kW
Maximum DTV Effective Radiated Power	719 kW